
XI. *On Woodsia, a new Genus of Ferns.* By Robert Brown, Esq.
F.R.S. Lib. L.S.

Read November 17, 1812.

THERE is perhaps no tribe of cryptogamous plants which since the time of Linneus has received greater additions to its number of species, or more considerable improvements in its systematic arrangement, than the *Filices*: and certainly no botanist has so essentially contributed to those improvements as the President of this Society; whose ingenious Essay on Dorsiferous Ferns may justly be considered as the groundwork of the more complete dissertations of Professors Swartz and Bernhardi, which have appeared since its publication*.

Linneus, in his latest work, the 13th edition of the *Systema Vegetabilium*, enumerates scarcely more than 200 Ferns, which he referred to twelve genera: while the *Species Plantarum* of the late Professor Willdenow contains upwards of a thousand plants of the same order, arranged under forty-three genera. It is however remarkable, that of this vast number of species nearly one half belong to four of the Linnean genera, namely *Polypodium*, *Acrostichum*, *Asplenium*, and *Pteris*, all of which were first proposed by Ray in his *Methodus Plantarum Emendata*, published in 1703;

* An. 1793, in *Mém. de l'Académie Royale des Sciences de Turin*, vol. v. p. 401.

without names, indeed, but with characters nearly similar to those of Linneus.

It appears, therefore, that the arrangement of Ferns at present universally followed is not wholly new: and that it has not attained such a degree of perfection as to supersede all changes in nomenclature, may be inferred from the genus *Polypodium* alone, though reduced nearly one-half by its present character, still including 157 species, or upwards of a seventh part of the whole order.

The expediency of subdividing *Polypodium*, as well as some of the other genera mentioned, especially *Acrostichum*, is indeed obvious, not merely on account of their great extent, but also from the striking differences in habit existing among the species referred to each.

I have, some time ago*, had an opportunity of remarking, that two plants referred to *Polypodium*, *P. ilvense* and *hyperboreum*, form a distinct genus, from the peculiar structure of their involucre, even the existence of which had escaped preceding observers.

This genus I have named in honour of my friend Mr. Joseph Woods, whose merits as an accurate and skilful English botanist are well known to many of the members of this Society: and the object of the present communication is to illustrate it by some additional observations on its structure, and by a very perfect drawing, for which I am indebted to the friendship of Mr. Francis Bauer.

The character distinguishing *Woodsia* from all other genera of Ferns hitherto established, consists in its involucre being inserted under the group of capsules, or, as it is technically called, the *sorus*, which it completely surrounds at the base; while it is in every stage open at top, having its margin divided

* *Prodr. Fl. Nov. Holl.* 1. p. 158, Obs. iv.

into a number of capillary segments, which from their length and incurvation entirely conceal the young capsules, and in a great measure the full grown.

That so singular a structure should have been hitherto unnoticed, even though both species of the genus have been described and figured since the publication of Dr. Smith's memoir, is not perhaps to be wondered at: for the membranaceous base of the involucre is completely concealed by the capsules, and the marginal hairs, which alone are visible, exactly resembling the pubescence of the frond, have been universally confounded with it.

The difficulty, too, of separating the membrane entire from the frond, to which, by the pressure of the capsules, it is closely applied, is so considerable, that, since the publication of my remark already quoted, its existence has been doubted by a botanist, whose opinion, especially in whatever regards this order of plants, is of peculiar weight, and in opposition to which I should not retain full confidence in my own observations, though frequently repeated, were they not so distinctly confirmed by Mr. Bauer's excellent drawing.

I first observed the involucre six years ago in living plants of *Woodsia hyperborea*, and have since repeatedly ascertained its existence in dried specimens of the same species, and of *Woodsia ilvensis*. These two plants are indeed so nearly related, that I find myself unable to construct for them clear specific characters; and therefore, in proposing them here as distinct species, I am, from want of sufficient materials to determine the question, rather following the prevailing opinion than my own.

To the characters and synonyms which follow, I have not thought it necessary to add descriptions of the two supposed species, these having been given by several of the authors referred to, and in every respect correctly, except what regards the involucre.

WOODSIA.

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Sori dorsales, subrotundi.

Involucrum calyciforme apertum margine crinitum: includens *Capsulas* pedicellatas: receptaculo communi elevato nullo.

Filiculæ, frondibus cæspitosis, pinnatim divisis; pilis simplicibus squamulisque angustis instructæ.

- ilvensis.* 1. *W.* frondibus bipinnatifidis, pinnis oblongis, pin-
nulis confluentibus multifloris: inferioribus
subrepandis: infimis subæqualibus.

Polypodium ilvense. Swartz. *Synop. Fil.* 39. Will-
den. *Sp. Pl.* 5. p. 198. Schkuhr *Crypt.* 16. t. 19.

Acrostichum ilvense. Linn. *Sp. Pl. ed.* 2. p. 1528.

Nephrodium lanosum. Michaux *Amer.* 2. p. 198.

Habitat in rupibus Europæ et Americæ borealis.

(v. v.) 4.

- hyperborea.* 2. *W.* frondibus pinnatis, pinnis triangularibus ob-
longisve inciso-pinnatifidis: lobis integerrimis paucifloris: antico baseos productione.
Tab. XI.

Polypodium hyperboreum. Swartz. *Synop. Fil.* 39.

Willden. *Sp. Pl.* 5. p. 197. *Engl. Bot.* 2023.

Polypodium arvonium. Smith *Fl. Brit.* 3. p. 1115.*

Polypodium ilvense. Withering *Arrang. ed.* 3. t. 3.
p. 774.

Acrostichum hyperboreum. Liljeblad in *Act.*

Stockholm. 1793. p. 201. t. 8.*

Acrostichum alpinum. Bolton *Fil. Brit.* 76. t. 42.

Ceterach alpinum. Lamarck et Decandolle *Fl.*

Fran. 2. p. 567.

Habitat in Europæ alpibus. (v. v.) 4.

EXPLANATION OF TAB. XI.

1. A native specimen of *Woodsia hyperborea*, natural size.
2. The stipes and lower part of the frond of the same plant, magnified 3 times in diameter.
3. A pinna of the same plant, magnified 10 diam.
4. A pinna from another specimen, in which the clusters of capsules (sori) are more numerous and confluent, 10 diam.
5. A single cluster of capsules within their involucre, the membranaceous base of which they entirely conceal, magnified 50 diam. (2500 times in superficies).
6. The involucre spread open, with only one capsule left in it, magnified 50 diam.
7. An unripe capsule.
- 8, 9. Side and back views of a ripe capsule. } magnified
- 10, 11. Capsule opening and entirely burst, shedding its seeds. } 50 diam.
12. A seed magnified 200 diam.
13. A frond of a cultivated plant of the same species, natural size.